

From the INTERNATIONAL BUREAU

PCTNOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)

(PCT Rule 44bis.1(c))

To:

PFLEGER, Edmund P.
Grossman, Tucker, Perreault & Pfleger, PLLC
55 So. Commercial St.
Manchester, NH 03101
ETATS-UNIS D'AMERIQUEDate of mailing (day/month/year)
07 May 2009 (07.05.2009)RECEIVED
MAY 13 2009Applicant's or agent's file reference
ART017PCTGROSSMAN, TUCKER,
PERREAULT & PFLEGER, PLLC

IMPORTANT NOTICE

International application No.
PCT/US2007/082262International filing date (day/month/year)
23 October 2007 (23.10.2007)Priority date (day/month/year)
23 October 2006 (23.10.2006)

Applicant

ARTHROSURFACE INCORPORATED et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Simin Baharlou

Facsimile No. +41 22 338 82 70

e-mail: pt09.pct@wipo.int

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference ART017PCT	FOR FURTHER ACTION	See item 4 below
International application No. PCT/US2007/082262	International filing date (<i>day/month/year</i>) 23 October 2007 (23.10.2007)	Priority date (<i>day/month/year</i>) 23 October 2006 (23.10.2006)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant ARTHROSURFACE INCORPORATED		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).																								
2.	This REPORT consists of a total of 5 sheets, including this cover sheet.																								
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																									
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 80%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44 <i>bis</i> .3(c) and 93 <i>bis</i> .1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44 <i>bis</i> .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 28 April 2009 (28.04.2009)
Facsimile No. +41 22 338 82 70	Authorized officer <div style="text-align: center; font-weight: bold;">Simin Baharlou</div> e-mail: pt09.pct@wipo.int

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: EDMUND P. PFLEGER
GROSSMAN, TUCKER, PERREAULT &
PFLEGER, PLLC
55 SO. COMMERCIAL ST.
MANCHESTER, NH 03101

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

09 OCT 2008

Applicant's or agent's file reference
ART017PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US 07/82262

International filing date (day/month/year)

23 October 2007 (23.10.2007)

Priority date (day/month/year)

23 October 2006 (23.10.2006)

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - A61B 17/00 (2008.04)

USPC - 606/80

Applicant ARTHROSURFACE INCORPORATED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion

05 October 2008 (05.10.2008)

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 07/82262

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:
- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of:
- a. type of material
- ☐ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☐ on paper
- ☐ in electronic form
- c. time of filing/furnishing
- ☐ contained in the international application as filed
- ☐ filed together with the international application in electronic form
- ☐ furnished subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 07/82262

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2-5, 10, 19, 20	YES
	Claims	1, 6-9 and 11-18	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1, 6-9 and 11-18 lack novelty under PCT Article 33(2) as being anticipated by US 2006/0195112 A1 to (Ek).

As per claim 1, Ek describes an excision tool (para [0064]) comprising:

a shaft (shaft 72, FIG. 7, para [0064]); and
a cutter (cutter 74, FIG. 7, para [0064]) configured to be coupled to said shaft to provide said cutter rotatable with said shaft (para [0066]) and tiltable relative to said shaft (FIG. 8, 9).

As per claim 6, Ek describes a system for excising a portion of an articular surface (para [0064]), said system comprising:

a stop sleeve comprising an axial bore (sheath 54, FIG. 8, para [0057]);
a central shaft rotatably and slidably receivable in said bore (shaft 72, FIGS. 6-7, para [0065]);
a cutter (cutter 74, FIG. 7, para [0064]) configured to be coupled to said central shaft to permit said cutter to rotate with said central shaft (para [0066]) and to be tiltable relative to said central shaft (FIG. 8, 9).

As per claim 7, Ek describes a system according to claim 6, wherein said stop sleeve is configured to be at least partially disposed in an access tunnel defined in a bone (FIG. 8, para [0057], [0064]), said stop sleeve being axially translatable within said access tunnel (para [0057], [0058]).

As per claim 8, Ek describes a system according to claim 7, wherein said stop sleeve comprises an external thread configured to threadably engage bone defining an access tunnel (FIG. 6, para [0057], [0058]).

As per claim 9, Ek describes a system according to claim 7, wherein said central shaft is configured to be axially translatable with said stop sleeve (para [0065]).

As per claim 11, Ek describes a system according to claim 6, wherein said cutter comprises a bearing surface (sheath 75, FIG. 11) configured to travel along a distal end of said stop sheath (para [0068]).

As per claim 12, Ek describes a method of excising a portion of an articular surface (para [0115]) comprising:
providing an access tunnel extending through a bone to said articular surface (para [0057], [0058], [0115], FIG. 5);
inserting a central shaft at least partially into said access tunnel (para [0057], [0058], [0115], [0116], FIG. 8);
coupling a cutter to said central shaft (cutter 74, FIG. 7, para [0064]), said cutter tiltable relative to said central shaft (FIG. 8, 9);
rotating said cutter (para [0066]); and
applying a retrograde force to said cutter to urge said cutter into said articular surface (para [0067]).

As per claim 13, Ek describes a method according to claim 12, wherein rotating said cutter comprises applying a rotational force to said cutter through said central shaft (para [0067]).

As per claim 14, Ek describes a method according to claim 12, wherein applying a retrograde force comprises withdrawing said central shaft away from said articular surface (para [0067]).

As per claim 15, Ek describes a method according to claim 12, further comprising installing a stop sleeve at least partially into said access tunnel (para [0057]), said stop sleeve receiving at least a portion of said central shaft through said stop sleeve (para [0064]).

As per claim 16, Ek describes a method according to claim 15, wherein applying a retrograde force comprises withdrawing said stop sleeve and said central shaft away from said articular surface (para [0067], [0068]).

As per claim 17, Ek describes a method according to claim 16, wherein said stop sheath is threadably engaged in said access tunnel, and withdrawing said stop sleeve and said shaft comprises threadably translating said stop sleeve away from said articular surface (para [0058] - para [0059]; [0067] - [0068]; FIGS. 8-9).

As per claim 18, Ek describes a method according to claim 16, comprising positioning a bearing surface of said cutter adjacent to a distal end of said stop sleeve and withdrawing said cutter and said stop sleeve away from said articular surface (para [0068]).

-----Please See Continuation Sheet -----

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 07/82262

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:
Box V.2. Citations and explanations:

Claims 19 and 20 lack an inventive step under PCT Article 33(3) as being obvious over Ek.

As per claim 19, Ek describes a method according to claim 15, comprising providing a guide sleeve (para [0115]), but does not show the guide sleeve positioned at least partially through said stop sleeve, said central shaft extending at least partially through said guide sleeve. However, such a configuration would have been obvious to one of ordinary skill in the art as it would allow the stop sleeve to be properly positioned, and eliminate the need to remove the guide sleeve before excision by the central shaft occurred, reducing the complexity of the procedure.

As per claim 20, Ek describes a method according to claim 19, but does not show further positioning a distal end of said guide sleeve adjacent to said cutter, said guide sleeve directing an orientation of said cutter during rotation thereof. Such a configuration would have been obvious to one of ordinary skill in the art as it would allow predetermined definition of an excision orientation, eliminating the need for adjusting the cutter during the procedure and preventing possible errors in cutting.

Claims 2-5 and 10 lack an inventive step under PCT Article 33(3) as being obvious over Ek in view of US 2003/0171756 A1 to Fallin et al. (hereinafter: Fallin).

As per claim 2, Ek describes an apparatus according to claim 1, but fails to describe wherein said cutter is configured to be removably coupled to said shaft. However, Fallin describes a bone excision tool (para [0016]) which includes a cutter element (mill 300, FIG. 3) that is removable from the shaft (para [0063], [0069]). It would have been obvious to one skilled in the art to provide a removable cutter as described by Fallin on the device of Ek so as to be able to replace the cutter for alternate cutters of different sizes, or for replacing worn cutters.

As per claim 3, Ek describes an apparatus according to claim 1, wherein said cutter comprises a coupling (para [0071]), said cutter configured to be tiltable relative to said central shaft about said coupling (FIG. 8, 9), but fails to describe the coupling being a ball. However, Fallin describes a bone excision tool (para [0016]) which includes a ball coupling (para [0080]). It would have been obvious to one skilled in the art to provide a ball coupling as described by Fallin on the device of Ek so as to provide extra degrees of freedom for movement, so as to provide more complex cutting.

As per claim 4, Ek and Fallin describe an apparatus according to claim 3. Ek also teaches an apparatus wherein said shaft comprises an opening adjacent to an end of said shaft (FIG. 11), said opening sized to receive at least a portion of said cutter and said coupling (para [0068]) and Fallin describes a ball coupling (para [0080]).

As per claim 5, Ek describes an apparatus according to claim 1, but fails to describe wherein said cutter is configured to be coupled to said shaft via a pivot pin. However, Fallin describes a bone excision tool (para [0016]) which includes an element attached to the sleeve with a pivot pin (para [0060] - para [0061]). It would have been obvious to one skilled in the art to provide a pivot pin coupling as described by Fallin on the device of Ek so as to provide a simple, easily adjustable coupling between the cutter and shaft.

As per claim 10, Ek describes a system according to claim 6, wherein said cutter comprises a coupling (para [0071]), said cutter configured to be tiltable relative to said central shaft about said coupling (FIG. 9), but fails to describe the coupling being a ball. However, Fallin describes a bone excision tool (para [0016]) which includes a ball coupling (para [0080]). It would have been obvious to one skilled in the art to provide a ball coupling as described by Fallin on the device of Ek so as to provide extra degrees of freedom for movement, so as to provide more complex cutting.

Claims 1-20 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.